

REMARKS

By this Amendment, claims 1, 10, 11, 20 are amended, and claims 21-27 are newly added.

The Office Action stated that Claims 10 and 20 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The Applicant appreciates the indication that claims 10 and 20 will be allowable if rewritten in independent form including all the limitations of base claim and any intervening claims. Claim 10 is rewritten in independent form including all the limitations of the previous base claim. Claim 20 is amended to depend from claim 10. Thus claims 10 and 20 are allowable.

The Office Action stated that claims 1-2, 4-5, 7-12, 14-15 and 17-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,153,511 to Watatani (hereinafter "Watatani") in view of US 6,521,548 to Jeng (hereinafter "Jeng").

As shown above, the Office Action stated claims 10 and 20 were objected to but would be allowable if rewritten in independent form in Allowable Subject Matter (page 4, paragraph number 4, in the Office Action). The Office Action Summary also showed claims 10 and 20 are objected to but not rejected. Further, regarding claims 10 and 20, the Office Action did not show any reasons of rejections. Therefore, the Applicant believes that the Office Action only rejected claims 1-2, 4-5, 7-9, 11-12, 14-15 and 17-19, but did not reject claims 10 and 20.

Regarding claims 1-2, 4-5, 7-9, 11-12, 14-15 and 17-19, the rejection is respectfully traversed at least because of the following reasons.

Claims 1 and 11 each recite the limitation "forming a second insulation film directly on said first insulation film by a spin-on process."

Figures 5A-5I of Watatani disclose a first organic SOG film 74 and a second organic SOG film 78. However, in Watatani, another insulation film 76 of SiO₂ is formed on the first interlayer insulation film 74 by a plasma CVD process (column 5, lines 63-65 of the specification of Watatani) and the organic SOG film 78 is formed on the insulation film 76 as a second interlayer insulation film by a spin-coating process (column 6, lines 1-3). Thus

Watatani does not disclose forming a second insulation film directly on said first insulation film by a spin-on process.

Moreover, Jeng discloses a method of forming a spin-on-passivation layer, the method comprising spinning on a spin-on-dielectric (SOD) layer on the semiconductor wafer. However, Jeng merely discloses a plasma-enhanced chemical vapor deposition (PECVD) process forms a PE oxide layer 34 on the semiconductor substrate 30, thereafter, a precursor spin-on process and an edge bevel rinse (EBR) process form a glue layer 35 on the surface of the PE oxide layer 34, and then a SOD layer 36 on the glue layer 35 fills the gap 33 between the two neighboring metal lines 32 (Column 3, lines 53-67).

The combination of Watatani and Jeng does not teach or suggest the limitation “forming a second insulation film directly on said first insulation film by a spin-on process” recited in each of claims 1 and 11.

Further, claims 1 and 11 recite the limitations “applying a first curing process to said first insulation film at a temperature of 380 - 500°C over a duration of 5 – 180 seconds” and “applying a second curing process to said first insulation film and said second insulation film.”

However, Watatani does not disclose applying a curing process to insulation films.

Moreover, Jeng discloses a curing process to the spin-on-dielectric (SOD) layer 36 at a temperature between 400 and 450°C over a duration of 3-5 minutes, but merely teaches curing process to the single spin-on-dielectric (SOD) layer 36.

The combination of Watatani and Jeng does not teach or suggest the limitations of “applying a first curing process to said first insulation film at a temperature of 380 - 500°C over a duration of 5 – 180 seconds” and “applying a second curing process to said first insulation film and said second insulation film” recited in claims 1 and 11.

Claims 2, 4-5, 7-9 depend from claim 1 and claims 12, 14-15 and 17-19 depend from claim 11.

To establish a prima facie case of obviousness, all the claimed limitations must be taught or suggested by the prior art. Reconsideration and withdrawal of the rejection of claims 1-2, 4-5, 7-9, 11-12, 14-15 and 17-19 under 35 U.S.C. 103(a) over Watatani in view of Jeng are respectfully requested, at least because the Office Action fails to show that the combination of Watatani and Jeng teaches or suggests all the limitations recited in the claims.

Claims 3, 6, 13 and 16 were rejected under 35 U.S.C. 103(a) as being unpatentable over Watatani in view of Jeng and further in view of US 6,558,756 to Sugahara et al. (hereinafter "Sugahara").

The rejection is respectfully traversed. Claims 3 and 6 depend from claim 1 and claims 13 and 16 depend from claim 11. Claims 3, 6, 13 and 16 are allowable for at least the reasons presented above with respect to claims 1 and 11. Sugahara also fails to cure the deficiencies of Watatani and Jeng discussed above with respect to claims 1 and 11. The Office Action also fails to show that the combination of Watatani, Jeng and Sugahara teaches or suggests all the limitations recited in claims 3, 6, 13 and 16.


Accordingly, reconsideration and withdrawal of the rejection of claims 3, 6, 13 and 16 under 35 U.S.C. §103(a) over Watatani in view of Jeng further in view of Sugahara are respectfully requested.

In view of the above amendments are remarks, Applicants respectfully submit that all of the claims are allowable and that the entire application is in condition for allowance.

Should the Examiner believe that anything further is desirable to place the application in better condition for allowance, the examiner is invited to contact the undersigned at the telephone number listed.

Respectfully submitted,
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